

CLAIMS

1. A method for manufacturing a stamper for direct mastering, comprising the steps of:

forming a thermosensitive material layer capable of acting as
5 a negative type by a laser beam on a substrate;

irradiating a laser beam to predetermined areas of said thermosensitive material layer so as to partially perform exposure; and

wet-etching said partially exposed thermosensitive material
10 layer so as to form a fine pits-and-bumps pattern.

2. A method for manufacturing a stamper for direct mastering according to claim 1, wherein said thermosensitive material layer contains an oxide of at least one element selected from the group consisting
15 of molybdenum and tungsten.

3. A method for manufacturing a stamper for direct mastering according to claim 1, wherein the step of forming said thermosensitive material layer comprises a reactive sputtering step which uses a target
20 containing at least one element selected from the group consisting of molybdenum and tungsten.

4. A method for manufacturing a stamper for direct mastering according to claim 3, wherein a partial pressure of argon gas is 0.1

to 0.20Pa, an oxygen partial pressure is 0.05 to 0.10Pa, and sputtering energy is 100 to 1000W in said reactive sputtering step.

5 5. A method for manufacturing a stamper for direct mastering
according to claim 1, further comprising the step of forming a
heat-adjusting layer between said substrate and said thermosensitive
material layer.

10 6. A method for manufacturing a stamper for direct mastering
according to claim 5, wherein a thermal conductivity of said
heat-adjusting layer is one-tenth or lower than a thermal conductivity
of said thermosensitive material layer.

15 7. A method for manufacturing a stamper for direct mastering
according to claim 5, wherein said heat-adjusting layer contains at
least one resin selected from the group consisting of acryl-based resin,
nylon-based resin, and polyester-based resin.

20 8. A method for manufacturing a stamper for direct mastering
according to claim 5, wherein said heat-adjusting layer contains at
least one inorganic material selected from the group consisting of
dielectric substances and metals, and said inorganic material has an
absorption coefficient of 0.8 or higher with respect to a wavelength
of said laser beam.

9. A method for manufacturing a stamper for direct mastering according to claim 1, wherein said substrate is in the shape of disc-like stamper of which inner and outer diameters are processed.

5 10. A method for manufacturing a stamper for direct mastering according to claim 1, further comprising the step of processing said substrate into the shape of stamper.

10 11. A method for manufacturing a stamper for direct mastering according to claim 1, wherein the step of forming a fine pits-and-bumps pattern by said wet-etching comprises a step of etching said substrate so as to form the fine pits-and-bumps pattern using said partially exposed thermosensitive material layer as an etching mask.

15 12. A stamper for direct mastering manufactured by means of a method of any one of claims 1 to 11.

 13. An optical disc to be manufactured using the stamper of claim 12.